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ABSTRACT

Literacy educators have a responsibility to effectively integrate information and communication technologies (ICT) into the literacy curriculum to prepare students for the literacy future they deserve. The International Reading Association (IRA) believes that much can be done to support students in developing the new literacies that will be required in their futures. The IRA believes that students have the right to: teachers who are skilled in effective use of ICT for teaching and learning; a literacy curriculum that integrates the new literacies of ICT into instructional programs; instruction that develops the critical literacies essential to effective information use; assessment practices in literacy that include reading on the Internet and writing using word processing software; opportunities to learn safe and responsible use of information and communication technologies; and equal access to ICT. This position paper discusses various aspects of the new literacies and considers staff development and teacher education issues regarding ICT. Additionally, the paper recommends an intensive program of research on literacy and technology issues and states that reading instruction must address the profound changes taking place with the new literacies. It lists recommendations for teachers, parents, teacher educators, school administrators, policymakers, and researchers. (Contains 22 references and a list of related resources.) (NKA)

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Integrating Literacy and Technology in the Curriculum

A POSITION STATEMENT OF THE INTERNATIONAL READING ASSOCIATION

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The Internet and other forms of information and communication technology (ICT) such as word processors, Web editors, presentation software, and e-mail are regularly redefining the nature of literacy. To become fully literate in today's world, students must become proficient in the new literacies of ICT. Therefore, literacy educators have a responsibility to effectively integrate these technologies into the literacy curriculum in order to prepare students for the literacy future they deserve.

The International Reading Association believes that much can be done to support students in developing the new literacies that will be required in their future. We believe that students have the right to

- teachers who are skilled in the effective use of ICT for teaching and learning;
- a literacy curriculum that integrates the new literacies of ICT into instructional programs;
- instruction that develops the critical literacies essential to effective information use;
- assessment practices in literacy that include reading on the Internet and writing using word-processing software;
- opportunities to learn safe and responsible use of information and communication technologies;

  and
- equal access to ICT.

Expanding our conception of literacy

New literacies are rapidly generating in order to effectively exploit the potentials of ICT (Karchmer, in press; Kinzer & Leander, in press; Labbo, 1996; Leu, 2000a; Luke, 2000; Reinking, McKenna, Labbo, & Kieffer, 1998; Warschauer, 1999). New information and communication technologies also make possiblenew instructional practices. Thus, traditional definitions of reading, writing, and viewing, and traditional definitions of best practice instruction—derived from a long tradition of book and other print media—will be insufficient.

Although there are multiple ways to view the changes in literacy emerging from new technologies (Labbo & Reinking, 1999), it is not possible to ignore them. We need only to consider the experience of students who graduate from secondary school this year to see how literacy is changing. Graduates began their school career being taught the literacies of paper, pencil, and book technologies. Many will finish their secondary school careers familiar with the new literacies demanded by a wide variety of ICT: word processors, CD-ROMs, Web browsers, Web editors, presentation software, e-mail, instant messaging, and many others unimagined at the beginning of their schooling. Because of rapid changes in technology, it is likely that students who begin school this year will experience even more profound changes in their literacy journeys. Moreover, this story will be repeated again and again as new

generations of students encounter yet unimagined information and communication technologies and develop yet unimagined new literacies.

The changes to literacy are unprecedented in several respects. First, they are defined by regular and continuous change; the new literacies of today will be replaced by even newer literacies tomorrow as new information and communication technologies continuously emerge (Leu, 2000a). Second, the changes to literacy are taking place with breakneck speed; no other technologies of literacy have entered school classrooms so rapidly, including the technologies of television, telephones, paper, pencil, or even books. Finally, networked ICT such as the Internet includes the most powerful capabilities for information and communication we have ever seen, permitting access to people and information in ways and at speeds never before possible. Such changes have important implications for instruction, assessment, and research. The literacy community needs to quickly turn its attention to these profound changes.

The Internet is rapidly entering nearly every classroom in developed nations around the world.

The Internet and other ICT have become powerful new tools in the classroom as nations seek to prepare children for their future in an information age. Nations such as Australia, Finland, Ireland, New Zealand, the United Kingdom, the United States, and others are developing public policies to ensure that classrooms have an Internet computer and appropriate software, ICT is integrated into the curriculum, and teachers are prepared for the effective integration of these new technologies into the classroom (Leu, 2000b; Leu & Kinzer, 2000). Some nations have developed websites to support teachers as they integrate Internet technology into the curriculum (see, for example, Ireland's ScoilNet [**http://www.scoilnet.ie/**]; Australia's EdNa [**http://www.edna.edu.au/EdNA/**]; Canada's SchoolNet/Rescol [**http://www.schoolnet.ca/home/**]; United Kingdom's National Grid for Learning [**http://www.ngfl.gov.uk/index.html**]; and New Zealand's Te Kete Ipurangi [**http://www.tki.org.nz/**]). Because of these public policy initiatives, many nations will soon have an Internet computer in every classroom. In the United States, for example, 77% of K-12 classrooms had at least one computer with an Internet connection in the fall of 2000 (Cattagni & Farris, 2001). Developments such as these demand from literacy educators a vision that includes ICT within the literacy curriculum.

Equity of access to Internet and other ICT will ensure literacy opportunities for children around the world.

In many countries, a pattern similar to one in the United States exists: Nearly twice as many classrooms in wealthier U.S. schools have Internet computers as do poorer schools (NCES, 2000). Continuation of this trend in societies that profess egalitarian ideals presents an important threat to these

societies' long-term political stability. The problem is even greater in developing nations, where classroom Internet access is only a dream. Will this lead to a widening gulf between haves and have-nots around access to information afforded different nations? It is essential that literacy educators and others support equal access to information technologies for all students to ensure that each student has equal access to life's opportunities.

Providing adequate education and staff development will ensure that each teacher is prepared to effectively integrate ICT into the curriculum.

Providing adequate funding for staff development in the effective integration of ICT into the curriculum is essential to provide students with the learning opportunities they require. Although the U.S. Department of Education recommends that 30% of a school district's technology budget be devoted to staff development (U.S. Department of Education, 1999), districts in the United States provide, on average, only about 6% of their technology budget to this important effort (CEO Forum, 1999; U.S. Department of Education, 1999). Adequate funding for staff development in the effective use of ICT in the classroom is important for all nations. Leadership must be provided on this issue to encourage schools to adequately fund staff development in the new literacies of ICT.

Teacher education programs can play a critical role in preparing teachers for using the new technologies of literacy in the classroom.

An important aspect of the challenge we face is the response of teacher education programs (Web-Based Education Commission's Report, 2000). Teacher education must begin to include the new technologies of literacy within literacy methods courses. Although this is beginning to take place, much more remains to be accomplished. As recently as 1997, the National Council for Accreditation of Teacher Education (NCATE) noted, "Not using technology much in their own research and teaching, teacher education faculty have insufficient understanding of the demands on classroom teachers to incorporate technology into their teaching" (NCATE, 1997).

Creative initiatives to increase access, provide staff development, and support teacher education should be supported by professional literacy organizations.

In many countries, creative public policy initiatives are beginning to provide access to technology and support for teachers in integrating these new technologies into the classroom. In Finland, for example, teachers are provided with a 5-week staff development program in the effective use of IT in the classroom. In the United States, the federal government provides $2.25 billion to K-12 schools and public libraries for Internet access each year. Many other initiatives are appearing in nations around the world, but these sometimes

become a part of public policy debates and the internal politics of a nation. Seldom have professional literacy organizations participated in these debates. Literacy professionals have an important interest in the outcome of these debates, and professional literacy organizations should ensure that these interests are heard.

We must pay particular attention to developing the critical literacies these new technologies demand.

Open information networks, such as the Internet, permit anyone to publish anything. This is one of the opportunities this technology presents, but it is also one of its limitations. Information is much more widely available from people who have strong political, economic, religious, or ideological stances that profoundly influence the nature of the information they present to others. As a result, we must assist students to become more critical consumers of the information they encounter (Alvermann, Moon, & Hagood, 1999; Muspratt, Freebody, & Luke, 1996).

To adequately evaluate students' literacy achievement, reading and writing assessment must include the new literacies that are central to our students' future.

Reading and writing assessment must begin to include the new literacies of ICT if they are to meaningfully inform instructional practice. Despite the fact that students will be expected to navigate complex networks of information technologies when they leave school, not a single state in the United States and no country assesses reading with anything other than paper and print technologies. Further, despite the fact that many children prefer word processors when completing writing assignments and approximately 20% more students will pass a state writing assessment when permitted to do so (Russell & Plati, 2000), not a single state in the United States and few nations assess writing by allowing students to use a word processor.

An intensive program of research on literacy and technology issues will enable us to better understand the rapid changes taking place in the nature of literacy and literacy instruction.

Although studies of literacy and technology are gradually beginning to emerge in the research journals of literacy, the paucity of hard data in this area remains all too obvious (Reinking, McKenna, Labbo, & Kieffer, 1998). The task is too large, involves literacy in such profound ways, and must be accomplished so quickly that all literacy researchers need to consider how they might contribute. They should consider bringing their special area of expertise to the study of literacy within the new media of information and communication technologies in order to address many issues, but especially the

following: What new literacy skills are required by new forms of ICT? How can we best support students in acquiring these new literacies?

The current public policy debates on reading instruction must address a central point: When students complete their school careers, much of their reading will take place within ICT such as the Internet.

Recent public policy debates on reading have ignored the profound changes taking place to the technologies of literacy. As public policies are developed, defining reading solely around book technologies will shortchange our students. Proficiency at effectively using the new literacies of networked information technologies has become critical to our students' success in the workplace and in their daily lives. Public policy leaders must be informed about the changes taking place in reading so that thoughtful policies may be developed to prepare children for the literacy demands of their future.

Our responsibilities

What can we do to make sure that students are prepared for their literacy future? The International Reading Association recommends the following:

Recommendations for Teachers

- Take full advantage of professional development opportunities in technologies such as the internet.
- Systematically integrate Internet and other ICT in thoughtful ways into the literacy curriculum, especially in developing the critical literacies essential to effective information use.
- Explore the instructional strategies and resources developed by other
- teachers on the Internet, such as the ones listed on the back panel of this brochure.
- Provide equal access to technology to every student in your classroom.
- Ensure child safety in classroom Internet use.
- Regularly read professional publications such as books, print journals, and online journals to stay current on the research on and practical ideas for using technology to improve students' literacy learning.
- Join professional electronic mailing lists to exchange insights about effective instructional strategies.

Recommendations for Parents

- Inquire as to how your district and school integrates ICT into the reading and writing curriculum.
- Support district initiatives to provide up-to-date technology resources and staff development in the effective use of ICT.
- Supervise Internet use at home, especially by younger children.
- Become aware of age-appropriate Internet sites and software for use at home and in schools.

Recommendations for Teachar Educators

- Integrate effective instructional models that use the Internet and other technologies into preparation programs in literacy education.
- Show preservice and inservice teachers, through your own practice, how the new literacies of ICT are an essential component of the literacy curriculum.
- Provide opportunities for preservice teachers to practice using age-appropriate ICT in field experiences with K-12 children.
- Include online resources in your instructional program.
- Advocate that your higher education institution acquire and make available technology resources for use in your preservice education classes.

Recommendations for School Administrators

- Ensure that 30% of your district's technology budget be devoted to staff development in effective Instruction with technology.
- Provide sufficient time for teachers to develop proficiency in the new literacies of ICT.
- Develop thoughtful acceptable-use policies to ensure easy access to the best information resources for both teachers and students.
- Support teachers who seek to develop classroom websites to organize resources and publish student work; encourage them to host these sites on the district's server.
- Advocate for the inclusion of Internet and other technologies into state reading and writing assessments.
- Advocate for a school-based technology resource person who can help teachers implement ICT in their classroom literacy instruction.

Recommendations for Policy Makers

- Support initiatives that guarantee Internet access for schools and libraries.
- Support initiatives that provide funding for staff development and teacher education in integrating Internet and other technologies into the literacy curriculum.
- Ensure that the new literacies of the Internet and other ICT are integrated within assessments of reading and writing proficiency.
- Expand definitions of reading to include locating, critically evaluating, using, and communicating information in networked information environments such as the Internet.

Recommendations for Researchers

- Bring your particular area of expertise to researching effective ICT use so as to better inform policy makers and educators about how best to support new literacies.
- Carefully examine ways in which definitions of literacy are changing as well as the implications of these changes to research and development.
- Conduct research that identifies the new skills, strategies, and insights

essential for successful literacy performance within different information and communication technologies.

- Conduct research that identifies effective instructional strategies for developing proficiency with different information and communication technologies.

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Related Resources From IRA

Books

Fehring, H., & Green, P. (Eds.). (2001). *Critical literacy: A collection of articles from the Australian Literacy Educators' Association.* Newark, DE: International Reading Association.

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Online Resources

Miss Rumphius Award Winning Classroom Home Pages.
http://www.reading.org/awards/rumphius.html

Reading Online, IRA's Online Journal of Literacy Education.
http://www.readingonline.org

ROL Communities, the electronic mailing list for *Reading Online.*
http://www.readingonline.org/communities/comm_index.asp

RTEACHER, the electronic mailing list for *The Reading Teacher.*
http://www.reading.org/publications/rt/rt_listserv.html

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